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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,930	09/26/2003	Ulrich Bonne	H0004978(1100.1208101)	8299
128	7590	01/25/2006	EXAMINER	
HONEYWELL INTERNATIONAL INC. 101 COLUMBIA ROAD P O BOX 2245 MORRISTOWN, NJ 07962-2245			MOSS, KERI A	
			ART UNIT	PAPER NUMBER
			1743	

DATE MAILED: 01/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/671,930

Applicant(s)

BONNE ET AL.

Examiner

Keri A. Moss

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) 11-21 and 31-42 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 22-30 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) 1-42 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/30/04, 5/28/04, + 10/29/04.</u> | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-10 and 22-30, drawn to an apparatus with a concentrator, separator, phased heater array and ratio controller classified in class 422, subclass 68.1.
 - II. Claims 11-18, drawn to a phased heater structure with discharge device, classified in class 95, subclass 43.
 - III. Claims 19-21, drawn to a phased heater structure on a chip with switches, classified in class 337, subclass 1.
 - IV. Claims 31-34, drawn to an apparatus with means for concentrating and separating a fluid and for applying a discharge, classified in class 95, subclass 8.
 - V. Claims 35-42, drawn to a method for concentrating and separating a fluid and for applying a discharge, classified in class 422, subclass 38.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01).

Inventions I and II/III/IV are unrelated. In the instant case the different inventions have different functions as Group I has a ratio control mechanism that changes the ratio of first and second heating elements.

Invention IV and I-III are unrelated. In the instant case the different inventions have different effects, as IV has no phased heating elements.

Inventions II and I/III are unrelated. In the instant case the different inventions have different functions as Groups I/III can be used in a closed system that does not require a discharge device.

Inventions V and I-IV are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case, the process in VI can be practiced with another materially different product, such as one that contains a detector.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

5. During a telephone conversation with Kris T. Frederich on 1/6/06 a provisional election was made without traverse to prosecute the invention of Phased Micro

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Analyzer III, IIIA, claims 1-10. Applicant in replying to this Office action must make affirmation of this election. Claims 11-42 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Drawings

6. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the plurality of heating elements in the separator must be shown or the feature(s) canceled from the claim(s).

No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

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the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 1 and 22-27 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure that is not enabling. A sensor with a detector, critical or essential to the practice of the invention but not included in the claim(s), is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). Claim 1 does not disclose a device capable of sensing as it contains no detector. Claim 1 discloses a device for concentrating, separating and heating a fluid, but not one that senses the fluid.

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 1-10 and 22-30 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See

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MPEP § 2172.01. In claims 1 and 22, the omitted structural cooperative relationships are: how the ratio control mechanism is connected in the sensor.

11. Claims 1-10 and 22-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claims 1 and 22, it is unclear what the ratio control mechanism does. Does it control which heating elements are activated to heat? If so, the claims must so specify.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

13. Claims 1-2, 5, 22-24, 28 and 30 are rejected under 35 U.S.C. 102(a) as being anticipated by Bonne (USP 6,393,894). Bonne discloses a concentrator with a plurality of phased heaters and a separator with a heater (abstract). The detector 128 is connected to the separator 126 (Fig. 6). The concentrator in Fig. 9 is capable of being a pre-concentrator (see paragraph bridging columns 8 and 9). The controller controls the heater elements in a time-phased sequence, changing the ratio of active heaters in one portion relative to another portion of the sensor (column 2 lines 1-11). The controller is connected to the concentrator and the separator (Fig. 6). Bonne also discloses a

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discharge mechanism 36 that may be formed by a micro process (column 4 lines 14-19). Processor 156 in Fig. 7 is connected to the detectors, concentrator, separator and micro discharge mechanism 36.

14. Claims 1-2, 22-24 and 30 are rejected under 35 U.S.C. 102(a) as being anticipated by Geis (USP 6,413,781). In Figure 8, Geis discloses a fluid sensor comprising a concentrator 78 and separator 101 connected to the concentrator. The plurality of heating elements 90 in the concentrator 78 and the separator 101 have a time-phased sequence (Column 7 lines 45-49). The control mechanism 93 changes the ratio of heating elements relative to other heating elements and enables the concentrator to serve as a pre-concentrator (column 8 lines 22-38). A first detector 99 is connected to the separator and there is a micro discharge mechanism 95 and 101 with a diameter of 1mm proximate to the first detector 99.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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16. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 3-10 and 25-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Geis in view of Kubisiak (USP 6,169,965) and further in view of Geis. Geis does not disclose a second detector or a flow sensor. Nor does Geis teach a processor on a separate board from the concentrator, separator and phased heater array.

With regard to claims 3-4 and 28-29 Kubisiak discloses a detector 210 (Fig. 4) and a flow sensor 222 (Fig. 4), both connected to a processor 430 (column 9 lines 43-53; Fig. 9) comprising switches (Fig 9) and control logic (column 10 lines 10-13). Detector 210 is used to measure fluid properties (column 7 lines 43-45), whereas 222 is used as a flow sensor (Column 7 lines 49-50). Kubisiak teaches that the flow sensor may be located upstream or downstream of the heating element (column 8 lines 61-65). An advantage of using the Kubisiak system is that the processor 430 uses the data from the heater and the sensors to determine phase lags between the signals as well as fluid properties such as pressure or temperature. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Geis sensor structure with the processor and switches of Kubisiak in order to control the timing of the

activation of the different heating elements and to gain the additional advantage of determining the phase lag and fluid properties.

Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Geis in view of Kubisiak and further in view of Geis. Regarding the processor wired to the detectors on an independent board, see Geis column 9 lines 7-20, wherein the sensor device is selected from one of many known in the art, including and not limited to the Ion Mobility Spectrometer ("IMS"). It was well known in the art at the time of invention that sensing devices such as the IMS have control logic and are capable of being programmed to detect the signature of many different compounds. Therefore it would have been obvious to one skilled in the art at the time of invention that the sensor device of Geis would have a processor board with programmable control logic to detect the signatures of components.

With respect to claims 8-10 and 25-27, Geis does not teach a sensor wherein the concentrator, separator and phased heating elements are on a separate board from the processor. Kubisiak discloses a system in which the heaters and sensors are on a board separate from, but connected via wire bonds to, a board containing the processor, switches and control logic. While it appears that Kubisiak does not separate the heating elements from the processor, it would have been obvious to one of ordinary skill in the art to make separate the heaters from the processor to prevent overheating of the processor.

Double Patenting

17. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

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Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

18. Claims 1 and 22 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 14 of U.S. Patent No. 6,393,894 (Bonne). Although the conflicting claims are not identical, they are not patentably distinct from each other because instant application claim 1 is anticipated by the reference claim 14. Claim 14 of Bonne claims a separator. While Bonne does not expressly claim a concentrator, it appears that the "two or more elements spaced along and exposed to the sample fluid stream" function as concentrators. The heater elements function the same as the phased heater array of instant application claim 1, as they heat at different time points. The detector functions to sense constituents of a fluid. The controller controls the heater elements in a time-phased sequence, changing the ratio of active heaters in one portion relative to another portion of the sensor.

Conclusion

19. Claims 1-10 and 22-30 have been elected without traverse. Claims 11-21 and 31-42 have been withdrawn from further consideration. Claims 1 and 22-27 are rejected under 35 U.S.C. 112, first paragraph for lack of enablement. Claims 1-10 and 22-30 are rejected under 35 U.S.C. 112, second paragraph for the reasons listed above.

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Claims 1-2, 5, 22-24, 28 and 30 are rejected under 35 U.S.C. 102(a). Claims 3-10 and 25-29 are rejected under 35 U.S.C. 103(a) in view of the combination discussed above. Claims 1 and 22 are rejected for nonstatutory obviousness-type anticipatory double patenting.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keri A. Moss whose telephone number is 571-272-8267. The examiner can normally be reached on 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571)272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KAM 1/23/06


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